

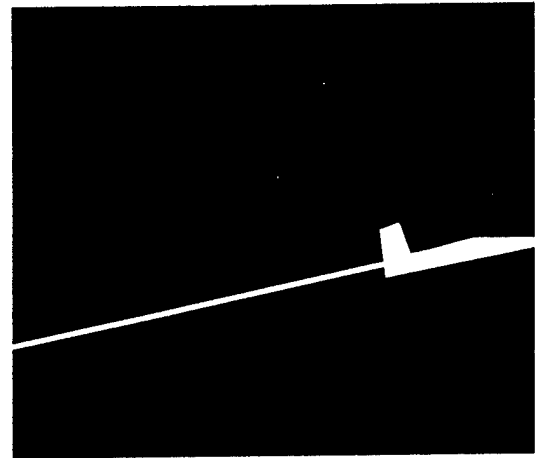
Contract No. F33657-92-2055/DO0015
CDRL No. A002, A007
Report No. SID/SD-94/0002

(Unclassified)

Instructor Lesson Guides

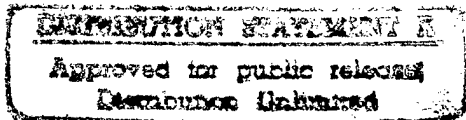
for

**Xyplex
Terminal Server
Training and Configuration**



SIDAC

Supportability Investment Decision Analysis Center



Prepared for

HQ AFMC/CIXR
Wright-Patterson AFB, Ohio 45433

April 15, 1994

Prepared by

Battelle Dayton Operations
5100 Springfield Pike
Dayton, Ohio 45431

Submitted by

SIDAC
5100 Springfield Pike
Dayton, Ohio 45431

19970128 217

DTIC QUALITY INSPECTED 1

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE April 15, 1994	3. REPORT TYPE AND DATES COVERED Training Material	
4. TITLE AND SUBTITLE Instructor Lesson Guides for Xyplex Terminal Server Training and Configuration			5. FUNDING NUMBERS Contract Number F33657-92-2055	
6. AUTHOR(S) Tittl, Marti			Delivery Order Number 0015	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Battelle 5100 Springfield Pike Suite 219 Dayton, Ohio 45431-1262			8. PERFORMING ORGANIZATION REPORT NUMBER SID12127	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) HQ AFMC/CIXR 4225 Logistics Avenue Suite 11 Wright-Patterson AFB, Ohio 45433-5750			10. SPONSORING/MONITORING AGENCY REPORT NUMBER SID/SD-94/0002	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 words) This document provides training material to assist the technician in installing and configuring data communications terminal servers. These instructions are specific to SM-FMDDs communications environment.				
14. SUBJECT TERMS Computer Communications			15. NUMBER OF PAGES 115	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT	

**Xyplex 1600
Installation and Configuration
Procedures**

**FOR SIDAC TASK 006
Contract Number F33657-92-D-2055**

Submitted to:

Department of the Air Force
Sacramento Air Logistics Center (SM-ALC/FMDD)
McClellan Air Force Base, CA 95652-5990

Submitted by:

Battelle Memorial Institute
5100 Springfiled Pike Suite 219
Dayton, Ohio 45431-1231
(513)-258-6756

12 January 1994

This report is a work prepared for the United States Government by Battelle. In no event shall either the United States Government or Battelle have any responsibility or liability for any consequences of any use, misuse, inability to use, or reliance upon the information contained herein, nor does either warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof.

Foreword

The following is configuration data for the Xyplex Terminal Servers located at McClellan AFB. This data has been compiled as a result of the testing efforts at Sacramento Air Logistics Center (SM-ALC) and reflects the specific changes required for SM-ALC. Installation at the sites other than SM-ALC will require modification to these procedures.

These installation and configuration procedures have been prepared for a single 16 port Xyplex terminal server. The procedures for installing and configuring an 8 port terminal server are identical to the 16 port instructions except for the modification of the number of ports specified.

These steps can be duplicated for the remaining Terminal Servers

Table of Contents

Section 1.0	
Xyplex 1600 Installation	1
Section 2.0	
Xyplex 1600 (version 4.1.3 and 4.1.3S26) Configuration	1
Section 2.1	
Network Configuration	9
Section 2.2	
Terminal Configuration	25
Section 2.3	
Printer Configuration	55
Section 2.4	
Connectivity Tests	77
Section 3.0	
Troubleshooting	87
Appendix A	
Keymapping Files	

Section 1.0 Xyplex 1600 Installation

Power Requirements

1-110 Volt 15 Ampere outlet

Cable Requirements

4 Pair twisted pair wire

1-Thinwire or AUI Ethernet connection

Software Requirements

Xyplex 1600 (versions 4.1.3 or 4.1.3S26)

Miscellaneous Equipment

16-RJ 45 Connectors (for the 4 pair terminal connectivity wire)

The terminal server must be plugged into an electrical outlet and booted with the software prior to the configuration of the device.

Section 2.0 Xyplex 1600 (versions 4.1.3 and 4.1.3S26) Configuration

This document details the configuration of the Xyplex 1600 terminal server, including:

- network use configuration
- terminal use configuration
- printer use configuration

The commands between version 4.1.3 and 4.1.3S26 are not different.

For the purpose of this document, the term 'terminal' refers to either a dumb terminal or PC using a terminal emulation package, such as SmartTerm 220 or 320.

When delivered from the factory, the Xyplex 1600 can be configured for use by connecting a terminal. The terminal should be configured with the following parameter settings:

Baud: 9600
Parity: None
Stop Bits: 1
Character Bits: 8

The Xyplex "Using the TCP/IP-LAT Terminal Server" manual should be referenced to determine the proper cable pinning configuration for terminal connection.

There are a couple of commonly used concepts and configuration and monitoring commands used on the Xyplex terminal server.

- Active Database

The active database includes the configuration of the terminal server in the current running status. Changes made in the active database will not be in effect when the terminal server is reinitialized.

- Permanent Database

The permanent database includes the configuration for the terminal server during the initialization, process. Changes made in the permanent database will not be in effect until the terminal server is reinitialized.

- Set

The SET command is used to change the configuration in the active database.

- Define

The DEFINE command is used to change the configuration in the permanent database.

- List

The LIST command is used to list configuration characteristics and terminal server activity in the permanent database.

- Show

The SHOW command is used to list configuration characteristics and terminal server activity in the active database, providing a status listing at the time the command was entered, a "snapshot."

- Monitor

The MONITOR command is used to continually show configuration characteristics in the active database and terminal server activity.

The following text appearances are used in this appendix:

- **Regular**

Terminal Server screen output as it appears during terminal server use and configuration

- **Bold**

Commands typed in during the configuration of the terminal server. For many commands, the input shown is provided as an example and should not be entered. Actual IP addresses and associated information should be obtained from a completed "Ethernet Node Address Request Form" obtained from SM-ALC/SCCB for each terminal server.

- *Italic*

Brief description of the command typed in. For a detailed explanation of the command, the TCP/IP-LAT Software Software Management Guide and Xyplex TCP/IP-LAT Software Commands Reference Guide manual should be referred to.

The following sample configuration was captured during an actual terminal server configuration session.

Welcome to the Xyplex Terminal Server.

Enter username> **Tim**

This allows the user to enter their user name. The name input does not impact unit operation.

Xyplex -901- Default Parameters being used

Xyplex> **show unit**

This command shows unit information. The information is presented to show factory default settings.

Hardware Type:	74
Hardware Revision:	00.00.00
Rom Revision:	440000
Software Type:	Terminal Server Level 3
Software Revision:	4.1.3S26
Protocol Type:	LAT, TELNET, RLOGIN

Enabled Feature(s): HELP

Xyplex> **show port**

This command shows the characteristics of the port connected to. The information is presented to show factory default settings.

```
Port 1: Tim                               10 Nov 1992 01:46:29

Character Size:      8                    Input Speed:      9600
Flow Control:       XON                  Output Speed:      9600
Parity:             None                 Modem Control:     Disabled

Access:             Local                Local Switch:      None
Backwards Switch:   None                 Name:              PORT_1
Break:              Local                Session Limit:     4
Forwards Switch:    None                 Type:              Soft

Preferred Service:   None

Authorized Groups:   0
(Current) Groups:    0
```

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Internet Connections,
Line Editor, Loss Notification, Message Codes, Output Flow Control,
Verification

Xyplex> **show server**

This command shows information about the server as a unit. This information is presented to show factory default settings.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:01:54

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server Welcome: Welcome to the Xyplex Terminal Server.

Circuit Timer:	80	Password Limit:	3
Console Port:	0	Queue Limit:	24
Inactivity Timer:	30	Retransmit Limit:	8
Keepalive Timer:	20	Session Limit:	64
Multicast Timer:	30	Software:	MX1500
Node Limit:	100	Identification Size:	63
Textpool Size:	16384	Timezone:	00:00
Accounting Entries:	0	Packet Count:	80

Service Groups: 0

Enabled Characteristics:

Announcements, Broadcast, Dump, Lock, Parameter Polling, TCP/IP Parameters, Proprietary Parameters, Purge Node

Xyplex> **show server internet characteristics**

This command shows the characteristics of the server, related to the Internet (TCP/IP) protocol and settings. This information is presented to show factory default settings.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server

Internet Address: 0.0.0.0 Internet TTL: 64

Internet Broadcast Address: 255.255.255.255

Domain Name:

Domain Suffix:

Domain TTL: 0

Primary Domain Address: 0.0.0.0

Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 0.0.0.0

Secondary Gateway Address: 0.0.0.0

Subnet Mask: 255.255.255.0

Subnet Mask Auto-Configure: ENABLED

Section 2.1 Network Configuration

Xyplex> **set privilege**

This command is used to enter privileged mode. Privileged mode is required to change most unit parameters and characteristics.

Password>

Prior to setting a unit password, the factory default password is enabled. The factory default password can be obtained from the Xyplex 1600 manual. When the password is entered it is not echoed to the screen.

Xyplex>> **define change enable**

This command enables server parameter changing commands to be active upon entering (active database) and active after a unit reboot (permanent database).

Xyplex> define server protocol lat enabled telnet enabled

This command activates the LAT and TELNET protocols on the server. The factory default configuration has both of these protocols enabled (SHOW UNIT. This command is provided to show the activation of the protocols in the event a protocol becomes disabled

Press <RETURN> to modify configuration, any other key to abort.

Xyplex -705- Change leaves approximately 2285328 bytes free

Xyplex>> **define server internet address 137.243.36.13**

This command sets the internet (IP) address of the unit. The IP address is assigned by SCCB upon the submittal of an Ethernet Address Request Form to SCCB. The form is returned with the relevant IP address information filled in by SCCB staff.

Xyplex>> **define server int subnet mask auto config dis**

This command sets the internet (IP) subnet mask auto configuration parameter to a disabled state, allowing the user to configure a tailored subnet mask. ie:utilizing a bit offset in the subnet mask.

Xyplex>> **define server internet subnet mask 255.255.254.0**

This command sets the internet (IP) subnet mask. The subnet mask is provided on the returned Ethernet Address Request Form.

Xyplex>> define server internet broadcast address 137.248.37.255

This command sets the internet (IP) broadcast mask. The broadcast address is provided on the returned Ethernet Address Request Form.

Xyplex>> define server internet default domain suffix .mcclellan.af.mil

This command sets the internet (IP) default domain suffix. This suffix is appended to all internet alias names entered. Check with the SCCB point of contact providing the information on the Ethernet Address Request Form for the current domain suffix.

Xyplex>> define server internet domain address 192.42.248.81

*This command sets the internet (IP) domain address, used to identify the on-site domain name server.
The domain name server address is provided on the returned Ethernet Address Request Form.*

Xyplex>> define server internet primary gateway address 137.243.37.244

This command sets the internet (IP) primary gateway address, used to connect to other IP subnets or networks. The primary gateway address is provided on the returned Ethernet Address Request Form and is commonly referred to as the default gateway.

Xyplex>> define server internet primary domain address 192.42.248.81

This command defines the address of the primary domain name server, used to provide conversion between "user-friendly" host names and IP addresses. So users can 'connect logdis1 ', the domain name server is queried to locate the IP address of logdis1. The domain name server provides the terminal server with The IP address so a telnet session can be established. All this is transparent to the user. The primary domain name server address is provided on the returned Ethernet Address Request Form.

Xyplex>> **define server protocol tn3270 enabled**

This command activates the use of the TN3270 protocol.

TN3270 Password>

The activation of the TN3270 protocol is password protected. The password to activate the TN3270 protocol is unique to each server and can be obtained from Xyplex. SM-ALC has a site-license for the use of TN3270. The password is entered but is not echoed to the screen when entered.

Press RETURN to modify configuration, any other key to abort.

Xyplex -705- Change leaves approximately 2234830 bytes free

Xyplex>> define server console logout enabled

This command controls the administrative function of logging into the console port of the terminal server. By having this feature enabled, when the remote console user logs out of the remote unit, the session is immediately disconnected. If disabled, the remote user must break the session and disconnect the session.

Xyplex>> **define server help enabled**

Xyplex -705- Change leaves approximately 2239678 bytes free

*This command activates the **HELP** facility on all ports of the server. Since all levels of users may be using any server, the help facility should be activated on all units. The amount of free bytes may be different.*

Xyplex>> **define server node limit none**

This command sets the LAT node limit to unlimited. Since the number of LAT-accessible nodes varies on the SM-ALC network, setting the number of nodes stored to unlimited ensures all LAT-accessible nodes are retained. By setting this parameter to unlimited, an unknown amount of unit memory will be used. The larger the number of nodes, the more unit free memory is required.

Xyplex>> define server login password

This command establishes a login password all users are required to enter in order to gain access to the server prompt.

Password>

Verification>

The person configuring the unit is required to enter the password and to re-enter it for verification. The password is not echoed to the screen. This command only sets the login password.

Section 2.2 Terminal Configuration

Xyplex>> define port all password enabled

This command activates login password access on all ports on the configured unit. This command activates the requirement for users to enter a password to gain access to the unit.

Xyplex>> **define port all internet connection enabled**

This command activates the ability to establish connections to an IP address rather than relying on the domain name server and ensures the connection made will be made using the TCP/IP protocol.

Xyplex>> define port all no loss enabled

This command provides a "type-ahead" buffer so the user can enter data during connection establishment and the data will be entered when the connection is established. If set to disabled, the entered data would be lost and have to be re-entered.

Xyplex>> **define port all pause enabled**

This command provides a pause prompting the user to continue after each screenfull of information. During a session, the pause feature is not used, but during unit examination and statistics checking, the user is prompted to press return after each screenfull of information on output requiring more than one screen.

Xyplex>> define port all prompt "S35529"

This command allows the configurer to set the prompt for the unit. The prompt will be determined by the SCCB staff. In this example, the server's name is used to allow the user to be able to identify which server they are connected to.

Xyplex>> define port all resolve service any

This command allows the terminal server to use LAT and then TELNET to establish a session to a desired host. When set to any, a LAT connection is attempted first. Upon failure, a TELNET session is attempted. This feature should be enabled for all DMMIS terminal servers to ensure connectivity to the DMMIS host.

Xyplex>> **define port all session limit 4**

This command defines the number of concurrent session a user at each port may have active. The value of 4 is strongly recommended and should not be exceeded

Xyplex>> **define server name s35529**

The command defines the name of the server, which appears in the 'SHOW SERVER' command as well as the TSM and SNMP output.

Xyplex>> define priv password

This command allows the configurer to redefine the privileged password, used to enter privileged mode. Since the factory default password is published in the Xyplex 1600 manual, it should be changed. Since this is the define command, the password will be changed in the permanent database and will not be active until the unit has been rebooted.

Password>

Verification>

The configurer will be prompted for the password and prompted to re-enter the password for verification. The passwords will not be echoed to the screen.

Xyplex>> set priv password

This command allows the configurer to redefine the privileged password, used to enter privileged mode. Since the factory default password is published in the Xyplex 1600 manual, it should be changed. Since this is the set command, the password will be changed in the active database and will only be active until the unit has been rebooted.

Password>

Verification>

The configurer will be prompted for the password and prompted to re-enter the password for verification. The passwords will not be echoed to the screen.

Xyplex>> **show unit**

This command is being entered at this time to show the unit's information after all the previous commands have been entered. Notice on the 'Protocol Type' line, TN3270 does not appear. TN3270 is not activated until the unit has been rebooted even though the TN3270 protocol has been enabled.

Hardware Type:	74
Hardware Revision:	00.00.00
Rom Revision:	440000
Software Type:	Terminal Server Level 3
Software Revision:	4.1.3S26
Protocol Type:	LAT, TELNET, RLOGIN

Enabled Feature(s): HELP

Xyplex>> **show server**

This command is being entered at this time to show the server information in the active (current) database after the configuration commands have been entered. This configuration will remain until the unit is rebooted.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:01:54

Address: 08-00-87-01-62-2E Name: S35529 Number: 0

Identification: Xyplex Terminal Server Welcome: Welcome to the Xyplex Terminal Server.

Circuit Timer:	80	Password Limit:	3
Console Port:	0	Queue Limit:	24
Inactivity Timer:	30	Retransmit Limit:	8
Keepalive Timer:	20	Session Limit:	64
Multicast Timer:	30	Software:	MX1500
Node Limit:	100	Identification Size:	63
Textpool Size:	16384	Timezone:	00:00
Accounting Entries:	0	Packet Count:	80

Service Groups: 0

Enabled Characteristics:

Announcements, Broadcast, Change, Console Logout, Dump, Lock, Parameter
Polling, TFTP Parameters, Proprietary Parameters, Purge Node

Xyplex>> **show server internet characteristic**

This command is being entered at this time to show the internet characteristics information in the active (current) database after the configuration commands have been entered. This configuration will remain until the unit is rebooted. Notice the addresses and other information have not been changed in the active database during the configuration process.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server

Internet Address: 0.0.0.0 Internet TTL: 64

Internet Broadcast Address: 255.255.255.255

Domain Name:

Domain Suffix:

Domain TTL: 0

Primary Domain Address: 0.0.0.0

Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 0.0.0.0

Secondary Gateway Address: 0.0.0.0

Subnet Mask: 255.255.255.0

Subnet Mask Auto-Configure: ENABLED

XYPLEX>> list unit

List unit shows the server's information in the permanent database, the database that will be used when the server is rebooted. Notice the TN3270 protocol has been enabled and will be activated when the unit is rebooted.

Hardware Type:	74
Hardware Revision:	00.00.00
Rom Revision:	440000
Software Type:	Terminal Server Level 3
Software Revision:	4.1.3S26
Protocol Type:	LAT, TELNET, RLOGIN, TN3270

Enabled Feature(s): HELP

Xyplex>> list server

List server shows the server's information in the permanent database, the database that will be used when the server is rebooted. Notice the TN3270 protocol has been enabled and will be activated when the unit is rebooted.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:01:54

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server Welcome: Welcome to the Xyplex Terminal Server.

Circuit Timer:	80	Password Limit:	3
Console Port:	0	Queue Limit:	24
Inactivity Timer:	30	Retransmit Limit:	8
Keepalive Timer:	20	Session Limit:	64
Multicast Timer:	30	Software:	MX1500
Node Limit:	100	Identification Size:	63
Textpool Size:	16384	Timezone:	00:00
Accounting Entries:	0	Packet Count:	80

Service Groups: 0

Enabled Characteristics:

Announcements, Broadcast, Change, Console Logout, Dump, Lock, Parameter
Polling, TFTP Parameters, Proprietary Parameters, Purge Node

Xyplex>> list server inter char

List server internet characteristic shows the server's information in the permanent database, the database that will be used when the server is rebooted. Notice the addresses and other unit characteristics have been set in the permanent database and will be active when the unit has been rebooted.

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server

Internet Address: 137.243.36.13 Internet TTL: 64
Internet Broadcast Address: 137.243.37.255

Domain Name:
Domain Suffix:

Domain TTL: 0
Primary Domain Address: 0.0.0.0
Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 137.243.37.244
Secondary Gateway Address: 0.0.0.0
Subnet Mask: 255.255.254.0
Subnet Mask Auto-Configure: DISABLED

Xyplex>> **show server inter char**

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server

Internet Address: 0.0.0.0 Internet TTL: 64
Internet Broadcast Address: 255.255.255.255

Domain Name:
Domain Suffix:

Domain TTL: 0
Primary Domain Address: 0.0.0.0
Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 0.0.0.0
Secondary Gateway Address: 0.0.0.0
Subnet Mask: 255.255.254.0
Subnet Mask Auto-Configure: DISABLED

Xyplex>> list server inter char

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: S35529 Number: 0

Identification: Xyplex Terminal Server

Internet Address: 137.243.36.13 Internet TTL: 64
Internet Broadcast Address: 137.243.37.255

Domain Name:
Domain Suffix:

Domain TTL: 0
Primary Domain Address: 192.42.248.81
Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 137.243.37.244
Secondary Gateway Address: 0.0.0.0
Subnet Mask: 255.255.254.0
Subnet Mask Auto-Configure: DISABLED

Xyplex>> **init delay 0**

Welcome to the Xyplex Terminal Server.

Enter username> Tim

S35529> **set priv**

Password>

S35529>> sh port tel char

Port 1: Tim

10 Nov 1992 01:58:38

Abort Output Character:	None	Newline:	CR/NULL
Attention Character:	None	Newline Filtering:	None
Default Port:	23	Query Character:	None
Echo Mode:	Remote	Remote Port:	2100
Erase Keystroke Character:	None	Synchronize Character:	None
Erase Line Character:	None	Transmit:	Buffered
Interrupt Character:	None	Binary Session Mode:	PASTHRU
TerminalType:	None	Tn3270 Device:	None
Tn3270 Translation Table:	None	Tn3270 Printer Port:	Any

Enabled Characteristics:

Tn3270 EOR

S35529>> def port all telnet tn3270 device vt220-7

S35529>> **show port tel char**

Port 1: Tim

10 Nov 1992 01:58:38

Abort Output Character:	None	Newline:	CR/NULL
Attention Character:	None	Newline Filtering:	None
Default Port:	23	Query Character:	None
Echo Mode:	Remote	Remote Port:	2100
Erase Keystroke Character:	None	Synchronize Character:	None
Erase Line Character:	None	Transmit:	Buffered
Interrupt Character:	None	Binary Session Mode:	PASTHRU
TerminalType:	None	Tn3270 Device:	VT220-7
Tn3270 Translation Table:	USENGLSH	Tn3270 Printer Port:	Any

Enabled Characteristics:

Tn3270 EOR

S35529>> def port all a telnet tn3270 xtdattr enabl

S35529>> set port all telnet tn3270 xtdattr enabl

S35529>> **show port tel char**

Port 1: Tim

10 Nov 1992 01:58:38

Abort Output Character:	None	Newline:	CR/NULL
Attention Character:	None	Newline Filtering:	None
Default Port:	23	Query Character:	None
Echo Mode:	Remote	Remote Port:	2100
Erase Keystroke Character:	None	Synchronize Character:	None
Erase Line Character:	None	Transmit:	Buffered
Interrupt Character:	None	Binary Session Mode:	PASTHRU
TerminalType:	None	Tn3270 Device:	VT220-7
Tn3270 Translation Table:	None	Tn3270 Printer Port:	Any

Enabled Characteristics:

Tn3270 EOR, Tn3270 XtdAttrs

S35529>> **defin change enbled**

S35529>> **sh unit**

Hardware Type:	74
Hardware Revision:	00.00.00
Rom Revision:	440000
Software Type:	Terminal Server Level 3
Software Revision:	4.1.3S26
Protocol Type:	LAT, TELNET, RLOGIN, TN3270

Enabled Feature(s): HELP

S35529>> **show server**

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:01:54

Address: 08-00-87-01-62-2E Name: X01622E Number: 0

Identification: Xyplex Terminal Server Welcome: Welcome to the Xyplex Terminal Server.

Circuit Timer:	80	Password Limit:	3
Console Port:	0	Queue Limit:	24
Inactivity Timer:	30	Retransmit Limit:	8
Keepalive Timer:	20	Session Limit:	64
Multicast Timer:	30	Software:	MX1500
Node Limit:	100	Identification Size:	63
Textpool Size:	16384	Timezone:	00:00
Accounting Entries:	0	Packet Count:	80

Service Groups: 0

Enabled Characteristics:

Announcements, Broadcast, Change, Console Logout, Dump, Lock,

press <RETURN> to continue...

Parameter Polling, TFTP Parameters, Proprietary Parameters, Purge Node

S35529>> **sho server inter char**

MAXserver V4.1.3S26 Rom 440000 HW 00.00.00 Lat Protocol V5.1 Uptime: 0 00:02:02

Address: 08-00-87-01-62-2E Name: S35529 Number: 0

Identification: Xyplex Terminal Server

Internet Address: 137.243.36.13 Internet TTL: 64
Internet Broadcast Address: 137.243.37.255

Domain Name:
Domain Suffix:

Domain TTL: 0
Primary Domain Address: 192.42.248.81
Secondary Domain Address: 0.0.0.0

Primary Gateway Address: 137.243.37.244
Secondary Gateway Address: 0.0.0.0
Subnet Mask: 255.255.254.0
Subnet Mask Auto-Configure: DISABLED

Section 2.3 Printer Configuration

S35529>> show port 16

Port 16: Tim

10 Nov 1992 01:46:29

Character Size:	8	Input Speed:	38400
Flow Control:	XON	Output Speed:	38400
Parity:	None	Modem Control:	Disabled

Access:	Local	Local Switch:	None
Backwards Switch:	None	Name:	PORT_16
Break:	Local	Session Limit:	4
Forwards Switch:	None	Type:	Soft

Preferred Service: None

Authorized Groups: 0
(Current) Groups: 0

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Internet Connections,
Line Editor, Loss Notification, Message Codes, Noloop, Output Flow Control,

press <RETURN> to continue...
Password, Pause, Verification

Xyplex>> **def port 16 access remote**

S35529>> def port 16 type hard

S35529>> def port 16 break dis

S35529>> def port 16 name S35529_16

S35529>> **show port 16**

Port 16: Tim

10 Nov 1992 01:46:29

Character Size:	8	Input Speed:	38400
Flow Control:	XON	Output Speed:	38400
Parity:	None	Modem Control:	Disabled

Access:	Local	Local Switch:	None
Backwards Switch:	None	Name:	PORT_16
Break:	Local	Session Limit:	1
Forwards Switch:	None	Type:	Hard

Preferred Service: None

Authorized Groups: 0
(Current) Groups: 0

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Internet Connections,
Line Editor, Loss Notification, Message Codes, Noloop, Output Flow Control,

press <RETURN> to continue...
Password, Pause, Verification

S35529>> def port 16 speed 9600

S35529>> **show port 16**

Port 16: Tim

10 Nov 1992 01:46:29

Character Size:	8	Input Speed:	9600
Flow Control:	XON	Output Speed:	9600
Parity:	None	Modem Control:	Disabled
Access:	Local	Local Switch:	None
Backwards Switch:	None	Name:	S35529_16
Break:	Local	Session Limit:	1
Forwards Switch:	None	Type:	Hard
Preferred Service:	None		
Authorized Groups:	0		
(Current) Groups:	0		

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Internet Connections,
Line Editor, Loss Notification, Message Codes, Nolooss, Output Flow Control,

press <RETURN> to continue...
Password, Pause, Verification

S35529>> def port 16 broadcast dis

S35529>> def port 16 line edit dis

S35529>> def port 16 local notif dis

S35529>> def port 16 mess code dis

S35529>> def port 16 no loss dis

S35529>> def port 16 pass dis

S35529>> def port 16 pause dis

S35529>> **def port 16 verify dis**

S35529>> **def port 16 sess limit 1**

This command sets the number of connections to the port to 1. This is required for a printer port.

S35529>> **show port 16**

Port 16: Tim

10 Nov 1992 01:46:29

Character Size:	8	Input Speed:	9600
Flow Control:	XON	Output Speed:	9600
Parity:	None	Modem Control:	Disabled
Access:	Remote	Local Switch:	None
Backwards Switch:	None	Name:	S35529_16
Break:	Local	Session Limit:	1
Forwards Switch:	None	Type:	Hard
Preferred Service:	None		
Authorized Groups:	0		
(Current) Groups:	0		

Enabled Characteristics:

Autobaud, Autoprompt, Input Flow Control, Internet Connections, Output Flow Control,

press <RETURN> to continue...

S35529>> def port 16 autobaud dis

S35529>> def port 16 autoprom dis

S35529>> sh port 16

Port 16: (Remote)

10 Nov 1992 01:46:29

Character Size:	8	Input Speed:	9600
Flow Control:	XON	Output Speed:	9600
Parity:	None	Modem Control:	Disabled
Access:	Remote	Local Switch:	None
Backwards Switch:	None	Name:	S35529_16
Break:	Local	Session Limit:	1
Forwards Switch:	None	Type:	Hard
Preferred Service:	None		
Authorized Groups:	0		
(Current) Groups:	0		

Enabled Characteristics:

Input Flow Control, Internet Connections, Output Flow Control,

press <RETURN> to continue...

S35529>> sh port 16 tel char

Port 16: (Remote)

10 Nov 1992 02:08:01

Abort Output Character:	None	Newline:	CR/NULL
Attention Character:	None	Newline Filtering:	None
Default Port:	23	Query Character:	None
Echo Mode:		Remote Port:	3600
Erase Keystroke Character:	None	Synchronize Character:	None
Erase Line Character:	None	Transmit:	Buffered
interrupt Character:	None	Binary Session Mode:	PASTHRU
Terminal Type: None		Tn3270 Device:	VT220-7
tn3270 Translation Table: USEENGLISH		Tn3270 Printer Port:	Any

Enabled Characteristics:

Tn3270 EOR, Tn3270 XtdAttrs

Section 2.4 Connectivity Tests

S35529>> c 192.42.248.81

Xyplex -010- Session 1 to 192.42.248.81 established

4.3 BSD UNIX (smdis01.sm.afmc.af.mil)

login:

S35529>> **C all2**

Xyplex -101- 1 other session(s) active

Xyplex -010- Session 2 to ALL2 on node HERA established

[2J120A

HERA [3B

Username:

S35529>> c 192.42.248.42 81

Xyplex-101- 2 other session(s) active
Xyplex-010- Session 3 to 192.42.248.31 established

OS/MVS Server Telnet -- at Host SNAG-SM.AF.MIL
ACP c v2.00 > -- Mon, 9 Nov 92 18:05:51 PST

Welcome to the OPEN-Link TELNET server.

This implementation is OPEN-Link/MVS (tm) Release 2.00. Copyright 1991 by
Network Solutions, Inc. All rights reserved.

Enter "NEWS" for announcements specific to this host.

ENTER COMMAND OR 'HELP':

sim3278

SIM3278/VTAM R5.0.0 BASE 11SEP89/10APR90 (C) COPYRIGHT SIMWARE INC 1989

```
*          SIM3278/VTAM          *
*                                *
*                                *
*          by                    *
*                                *
*          S I M W A R E Inc.    *
*                                *
*                                *
*          *****              *
```

*** McClellan AFB, California ***

3278 Applid ASMSIM

Real Terminal Name VSM1D011

Enter Application Name-->

Logon Data -->

Session Name --> SESS1

Virtual Terminal or POOL Name

Password-->

WP SCD PRODUCTION CICS--> SCDWP

WR SCD PRODUCTION CICS--> SCDWR

OC SCD PRODUCTION CICS--> SCDOC

SA SCD PRODUCTION CICS--> SCDSA

OO SCD PRODUCTION CICS--> SCDOO

SM SCD PRODUCTION CICS--> SCDSM

PF8==> PF9==> F10==> PF11==> PF12==> LOGOFF Logoff SIMVTAM

S35529>> **show sess**

1: Tim Session Mode

- session 1: Connected Interactive
- Session 2: Disconnecting Interactive
- Session 3: Connected Interactive

Current Session 3

192.42.248.81
ALL2 (HERA)
192.42.248.31

S35529>> set telnet option display enab

S35529>> sh sess

```
1: Tim Service Mode                      Current Session 3
- session 1: Connected Interactive        192.42.248.81
    [Do Echo] [Won't Echo] [Don't Binary] [Won't Binary]
- Session 2: Disconnecting Interactive    ALL2 (HERA)
- Session 3: Connected Interactive        192.42.248.31
    [Don't Echo Won't Echo] [Do Binary] [Will Binary]
    [Do Eor] [Will Eor] [Tn3278 Type Negotiated: IBM-3278-2]
```


S35529>> **dis sess all**

Xyplex -014- All sessions disconnected

S35529>> **sh sess**

1: Tim Service Mode

Current Session NONE

S35529>> set nopriv

S35529> **quit**

Xyplex -020- Logged out port 1 on server S35529 at 10 Nov 1992 02:09:36

SECTION 3.0 TROUBLESHOOTING

Troubleshooting:

Under the default setting, the free Textpool fills up. Events which may indicate the free Textpool is full are:

- connections relying on domain name server queries do not resolve when the link to the name server is known to be functional (can be tested by connecting to the domain name server's IP address. If the telnet session is established, then access to name server is available).
- no new LAT services or nodes are added. Typically seen when a new service is added to the network but does not appear in a "SHOW SERVICE service" command.

To check the free Textpool, use the "SHOW SERVER ALTERNATE STATUS" command, as shown below. If the current free Textpool size is 0 and the error count is high, then the free Textpool is full and more memory must be allocated to the free Textpool.

The free Textpool size can be increased using the command "DEFINE SERVER TEXTPOOL SIZE xxxxxx". The default is 16384 the recommended size is 32768, so the command to increase the size to the recommended size would be "DEFINE SERVER TEXTPOOL SIZE 32768. The Textpool can not be modified using the SET command and the server must be reset after the Textpool size has been increased.